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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,924	05/24/2002	Christopher L. Bohler	GLO 2 0075	6169

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EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT PAPER NUMBER

2875

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/063,924

Applicant(s)

BOHLER ET AL.

Examiner

Hargobind S Sawhney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,5,6,8,9,11,13,15,17-24 is/are rejected.
- 7) ☒ Claim(s) 3,4,7,10,12,14 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings filed on May 24, 2002 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftperson's Patent Drawing Review," PTO-948.

Claim Objections

2. Claim 11, 12 and 21-24 are objected to because of the following informalities:

Claim 11, line 2, "adapted to be accommodated " should be rephrased as -- accommodated --. The element " adapted to" is not a positive limitation but only enquires the ability to perform. It does not constitute a limitation in any patentable sense.

Claim 12, line 2, "saturated color light" lacks technical specifics. It should be amended as – saturated color, narrow bend light produced by high-powered LEDs – as detailed in Para, 0033 of the instant application specification.

Claim 21, line 7, ' Heat sinking" needs to be rephrased as --heat sink --.

Claim 23, line 4, "the base " should be rephrased as – the thermally conductive base – for consistency of the aforementioned limitation.

Claims 22-24 are necessarily objected because of their dependency on the objected base Claim 21.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,2,5,8,9,13,17-19 and 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Reisenaur et al. (U.S. Patent No. 6,161,910).

Regarding claims 1,2,5,8,9 and 13, Reisenaur et al. ('910) discloses a light module (Figures 1-3) comprising:

- a light emitting diode (LED) assembly 10 (Figures 1-3, column 3, line 1) defining a front side LED array 26 (Figures 1-3, column 3, line 38) and a rear side – the side bearing an LED circuit board - 22 (Figure 2);
- the rear side 22 further thermally communicating with the thermally conductive spreader 84 (Figures 1-3, column 4, lines 35-37);

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- a thermally conductive core 28 (Figures 1-3, column 4, lines 11, and 35-37) in thermal communication with the thermally conductive spreader 84;
- the thermal conductive core 28 providing means 72 (Figures 1-4, column 4, lines 24-28) for an electrical conductor 11 (Figures 2 and 4) operatively communicating with the front side LED array 26;
- a plurality of appendages positioned on the fin plate 30 (Figures 1-3, column 4, lines 11-15), and positioned about the thermally conductive core 28;
- the plurality of appendages on the fin-plate 30 being further in thermal communication with the conductive spreader 84;
- the plurality of appendages comprising fins (Figures 1-3, column 4, lines 12 and 13) on the fin plate 30;
- a housing 25 (Figures 1-3, column 3, lines 43-45) surrounding the front side LED array 26 (Figures 1-3);
- an optic 18 (Figure 3, column 3, lines 45-47) removably mounted to the housing 25 opposite to the front side LED array 26 (Figure 3, column 3, lines 51-59);
- the appendages on the fin plate 30 comprising fins surroundingly attached to the thermally conductive core 28 (Figures 3 and 4, column 4, lines 9-14);

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- the LED assembly (Figures 1 and 2) further comprising individually packaged LED elements (Figures 1) with each LED element having its own lens and electrically conductive elements; and
- the front side LED array 26 selectively producing white light (Figures 1-4, column 3, lines 38-40).

Regarding claims 17-19, Reisenaur et al. ('910) further discloses a light emitting diode assembly (Figures 1-3) comprising:

- a light emitting diode (LED) face 26 (Figures 1-3, column 3, line 38) supported by a body 16 (Figures 1-4, column 3, line 35; and column 4, lines 3 and 4) passaging electrical connection elements 11 (Figures 2-4);
- the body 16 further comprising a thermally conductive core 28 (Figures 1-3, column 4, lines 11, and 35-37) in thermal communication with the light emitting face 26 (Figures 2 and 3, column 4, lines 9-13); and
- a plurality of thermally conductive attachments on a plate 30 comprising fins surroundingly attached to the thermally conductive core 28 (Figures 3 and 4, column 4, lines 9-14) parallel to the central axis of the thermally conductive core 28 (Figure 3);

Regarding claims 21-24, Reisenaur et al. ('910) discloses a lamp (Figures 1-4) comprising:

- a LED assembly 10 (Figure 1-3, column 3, line 32) having forward facing side providing illumination from a plurality of energized LEDs 26 (Figure 1, column 3, line 50) and a rearward facing side thermally coupled

to a heat sink having elements 84,28 and 30 (Figures 1 and 2, column 4, lines 9-16 and 35-37);

- the heat sink with elements 84,28 and 30 drawing heat from the LEDs 26 (Figures 1 and 2, column 4, lines 9-16);
- the heat sink with elements 84,28 and 30 including means – exposed surface areas (fins) – (Figure 3) thermally communicating with the heat sink 30, and dissipating heat via well known the convection mode of heat transfer;
- the heat sink with elements 84,28 and 30 including a thermally conductive base 84 (Figures 1-3, column 4, lines 35-37) contacting the rearward facing of the LED assembly 26 (Figure 1);
- the heat sink with elements 84,28 and 30 including a thermally conductive core 28 (Figures 1-3, column 4, lines 11, and 35-37) extending from the thermally conductive base 84 in the direction away from the LED assembly 26; and
- the heat dissipating means – fins – being in contact with, and extending away from the heat conductive fin plate 30 (Figures 1-3, column 4, lines 11-13).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reisenaur et al. (U.S. Patent No. 6,161,910) in view of Garufo (German Patent No. DE 19528459 A1).

Regarding claims 6 and 20, dependent on claims 1 and 17 respectively, Reisenaur ('910) teaches plurality of appendages (Fins) 30 (Figures 1-3, column 4, lines 11-15) positioned about the thermally conductive core 28, and comprising fins (Figures 1-3, column 4, lines 12 and 13). However, Reisenaur ('910) does not teach the plurality of appendages including rods extending away from the rear side of the LED assembly.

On the other hand, Garufo (German Patent No. DE 19528459 A1) discloses a LED light fixture (Figure 1) comprising a plurality of appendages 8 being rods (Figure 1, column 3, lines 23 and 24).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the light module of Reisenaur ('910) by providing the plurality of appendages as taught by Garufo for benefit and advantage of improved thermal rejection efficiency of the heat sink as well as operational efficiency of the LEDs.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reisenaur et al. (U.S. Patent No. 6,161,910).

Reisenaur ('910) teaches a thermally conductive core and thermally conductive conductors being accommodated in a reading assembly in an aviation assembly. *application.*
However, Reisenaur ('910) does not teach a thermally conductive core and thermally conductive conductors being accommodated in a fixture selected from the set consisting of MR- style fixtures and PAR -style fixtures. *Appear O.K. for*

It has been held that a recitation with respect to the manner in which a claim apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitation.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reisenaur et al. (U.S. Patent No. 6,161,910) in view of Pederson (US Patent No. 6,367,949).

Reisenaur ('910) teaches a front side LED array but does not disclose specific rating in terms of lumens of the LED array. On the other hand, Pederson ('949) discloses a LED utility lamp 10 (Figure 1) comprising a LED array 16 (Figure 1, column 11, lines 27 and 28) providing energy light output of between 20 and 200 lumen (Figure 1, column 16, lines 40-43). Pederson ('949) further teaches that the LED array may be of any size preferred by the user.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the LED array of Pederson ('949) by providing more than one LED, *extend*

Reisenaur ('910)

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since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

Allowable Subject Matter

9. Claims 3,4,7,10,12,14 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, including Reisenaur et al. (U.S. Patent No. 6,161,910), does not show or suggest the applicant's invention as claimed. Specifically, the prior art of record does not disclose proper motivation for combining an illuminated display comprising:

- an optic including a plurality of lenslets corresponding to the LEDs in the front side LED array as recited in Claim 3;
- a housing providing variable spacing between an optic and a front side LED array as recited in Claim 4;
- the light module, as set forth Claim 1, further having a thermal resistivity less than 40 degrees Centigrade per watt as recited in Claim 10;
- each of the plurality of the LEDs positioned in a shaped recess, and the recess and the LED being covered as recited in Claim 7;

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- a front side LED array selectively producing saturated color light as recited in Claim 12;
- a front side LED array selectively producing desaturated color light based a mixture from a variety of saturated color LEDs as recited in Claim 14; and
- a front side LED array including individually powerable sets of LEDs as recited in Claim 16.

Claim 4 is necessarily objected because of its dependency on the objected base Claim 3.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yen (U.S. Patent No. 6,472,823 B2), McEwan et al. (U.S. Patent No. 5,036,248) and Masami et al. (U.S. Patent No. 4,729,076) each discloses a LED lamp comprising some of the claimed features claimed by the applicant.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S Sawhney whose telephone number is 703-306-5909. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 703-305-4939. The fax phone numbers

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for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2956.

HSS
January 2, 2003

A handwritten signature in black ink, appearing to read "Hargobind S. Sawhney". The signature is stylized with a large, circular initial "H" and a long, sweeping underline.

Examiner: Hargobind S. Sawhney